

AMENDMENT TO THE SPECIFICATION

Please replace paragraph 0037 on page 8, beginning on line 14 through line 20, with the following rewritten paragraph:

-- The liquid wing insert 30 of the present invention comprises six different surfaces, or planes, which are labeled P1, P2, P3, P4, P5, and P6. These six surfaces are referred to hereinafter as the base P1, the side face P2, the top face P3, the front face P4, the lower face P5, and the rear face P6. As illustrated, each face has four sides, and for ease of reference thereto, each side is labeled $i1$ through $i4$, wherein i is the ~~lower case~~ letter corresponding to the first letter of the name given to each face, as denoted above.--

Please replace paragraph 0040 on page 9, beginning on line 17 through line 27, with the following rewritten paragraph:

-- Referring more particularly to FIGURE 7, the base P1 of the liquid wing insert 30 is shown being a substantially flat, planar surface. The base P1 has four sides, labeled ~~b1, b2, b3, and b4~~ B1, B2, B3, and B4. The base P1 has a generally triangular appearance, but is not a true triangle because one apex is actually a small fourth side, i.e., ~~b4~~ B4, forming a trapezoidal shape. In a simplest embodiment, the base P1 of the liquid wing insert 30 could be affixed directly to the side of the knife opener 10. However, in a presently preferred embodiment of the invention, the base P1 is affixed to the mounting surface 36 of the raised boss 33 provided on the side of the knife opener 10, as shown best in FIGURES 4 and 5. As explained previously, the raised boss 33 can be provided on the side of the knife opener 10 to reduce the size of the tungsten carbide liquid wing insert 30.--

Please replace paragraph 0041 on page 9, beginning on line 28 through page 10, line 5, with the following rewritten paragraph:

-- In a preferred embodiment of the insert, the width W_b of the base P1 is about 0.546 inch. Some other preferred dimensional features of the liquid wing insert 30 particularly associated with the base P1 are labeled in FIGURE 7, including the height L_F of side ~~b4~~ B4, and angles θ_1 , θ_2 , θ_3 , and θ_4 . These

dimensions can have certain values which result in a presently preferred shape of the liquid wing insert 30. For example, in a preferred embodiment L_F is about 0.158 inch, θ_1 is about 131 degrees, θ_2 is about 90 degrees, θ_3 is about 68 degrees, and θ_4 is about 41.5 degrees. Additionally, a small radius, for example 0.03 inch, is provided at the intersection of each side except ~~b1 and b2~~ B1 and B2, at which intersection a relatively larger radius is provided, for example 0.10 inch.--

Please replace paragraph 0042 on page 10, beginning on line 6 through line 23, with the following rewritten paragraph:

-- As seen best in FIGURE 8, the side face P2 is the largest surface on the wing insert 30. The side face P2 has a generally triangular appearance, but also has four sides, labeled ~~s1, s2, s3, and s4~~ S1, S2, S3, and S4. However, similarly to the base P1, sides ~~s1 and s3~~ S1 and S3 of the side face P2, terminate at the small fourth side ~~s4~~ side S4, instead of forming an apex of a triangle. Also similarly to the base P1, a relatively large radius, such as 0.10 inch, is provided at the intersection of sides ~~s1 and s2~~ S1 and S2. The intersection of sides ~~s2 and s3~~ S2 and S3 of the side face P2 define outward most projecting point 38 of the wing insert 30 from the side of the knife opener 10. The edge 40 formed by the intersection of side ~~s2 with side r4~~ S2 with side R4 of the rear face P6 and the edge 42 formed by the intersection of side ~~s3 with side l4~~ S3 with side L2 of the lower face P5 can each be chamfered. These edges 40, 42 endure a large amount of contact with the soil, and are the edges of the liquid wing insert 30 most susceptible to damage from contact with the soil, and perhaps rocks or trash in the soil. The chamfers can prevent chipping of the edges 40, 42 in case of contact with hard objects such as the aforementioned like rocks and hard trash objects. Additionally, for manufacturing reasons, a small "ramp" 44 can be provided at the edge formed by the intersection of side ~~s1 with side t3~~ S1 with side T3 of the top face P3. The ramp 44 is actually concave, outward opening radius at the intersection of those two sides. In a preferred embodiment, the radius can be about 0.03 inch.--

Please replace paragraph 0043 on page 10, beginning at line 24 through page 11 at line 2), with the following rewritten paragraph:

-- The plane formed by the side face P2 is at a compound angle to the side of the knife opener 10, e.g., is angled relative to the side of the knife opener 10 in two different planes. In particular, the liquid wing insert 30 tapers from front to back, from a narrower leading front face P4 to a wider trailing rear face P6. The liquid wing insert 30 additionally tapers from top to bottom, from narrower at the top face P3 to wider at the lower face P5. Specifically, the side face P2 angles out away from the side of the knife opener 10 from front to back, as if rotated CW clockwise about the short front ~~side-s4~~ side S4, which also corresponds to ~~side-f2~~ side F2 of the front face P4. The side face P2 also angles out away from the side of the knife opener 10 from bottom to top, as if rotated CW clockwise about the longest ~~side-s1~~ side S1 of the side face P2, which also corresponds to ~~side-t3~~ side T3 of the top face P3.--

Please replace paragraph 0046 on page 12, beginning on line 3 through line 12, with the following rewritten paragraph:

-- The top face P3, shown best in FIGURES 6 and 8, extends along the top of the wing insert 30 adjacent the side of the knife opener 10. In a preferred embodiment, the top face P3 can be generally perpendicular to the plane formed by the base P1. The top face P3 is a relatively long and narrow surface defined by sides ~~t1, t2, t3, and t4~~ T1, T2, T3, and T4. The top face P3 gradually widens from a narrower forward-most ~~side-t4~~ side T4 to a wider rear-most ~~side-t2~~ side T2. The intersection of side ~~t2~~ T2 with side ~~r4~~ R4 of the rear face P6 can have a relatively large radius, such as 0.10 inch. The intersection of side ~~t4~~ T4 with side ~~f3~~ F3 of the front face P4 can likewise be radiused, but the radius is preferably much smaller, such as 0.03 inch. In a preferred embodiment the length L_F of ~~side-t4~~ side T4 is about 0.124 inch.--

Please replace paragraph 0047 on page 12, beginning on line 13 through line 27, with the following rewritten paragraph:

--As best viewed in FIGURE 6, the front face P4 is the leading member of the wing insert 30, and is a trapezoidal surface defined by sides ~~f1, f2, f3, and f4~~ F1, F2, F3, and F4. The plane formed by the front face P4 is angled slightly rearward relative to the side of the knife opener 10 (forming an acute angle therewith), and also slightly forward, i.e. in the direction of travel of the knife opener 10, relative to the lower face P5 (forming an obtuse angle therewith). The upper ~~side-f3~~ side F3 and lower ~~side-f1~~ side F1 are each radiused, minimally, such as a 0.03 inch radius, where each ~~side-f3, f1~~ side F3, F1 intersects with sides ~~t4 and t3~~ T4 and L3, respectively, of the top P3 and lower P5 faces of the wing insert 30. In a preferred embodiment, the plane formed by the front face P4 is about 90 degrees relative to the plane formed by the top face P3, and is angled about 112 degrees relative to the plane formed by the lower face P5. The front face P4 is further angled about 75.4 degrees to the plane formed by the base P1. In a preferred embodiment, the length L_F of ~~side f4~~ side F4 is about 0.158 inch. The small front face P4 (and narrow top face P3) present minimal impedance as the knife opener 10 carries the wing insert 30 through the soil.--

Please replace paragraph 0048 on pages 12 and 13 (beginning on page 12 at line 28 through page 13 at line 6), with the following rewritten paragraph:

--Referring to FIGURES 12 and 13, the lower face P5 of the insert is shown best, and is defined by four sides ~~t1, t2, t3, and t4~~ L1, L2, L3 and L4. Like the other surfaces of the liquid wing insert 30, the lower face P5 is also trapezoidal shaped, having two longer sides ~~t2 and t4~~ L2 and L4 extending from the a wider side ~~t1~~ L1 and converging at a shorter side ~~t3~~ L3. Preferably, the liquid wing insert 30 is designed such that when the base P1 is secured to the side of the knife opener 10, the plane formed by the lower face P5 is oriented generally angled with respect to the ground at a 2° taper from the front to the rear of opener 10 when the knife opener 10 is in operation. In this manner, the amount of resistance to the soil imparted by the wing insert 30 is primarily a function of the size and shape of the side face P2, and, to a lesser extent, the top P3 and front P4 faces.--

Please replace paragraph 0049 on page 13, beginning on line 7 through line 16, with the following rewritten paragraph:

-- The rear face P6 can also be seen best in FIGURES 12 and 13, being shown as a four sided trapezoidal surface defined by sides ~~r1, r2, r3, and r4~~ R1, R2, R3, and R4. The end 23 of the fertilizer tube 20 terminates behind the rear face P6, and projects slightly outward from the side of the knife opener 10, but to a distance less than that which the rear face P6 projects. The rear face P6 is the surface which primarily protects the end of the fertilizer tube from contact with the soil, which would wear down or plug the end 23 of the tube 20. In a preferred embodiment, the intersection of side ~~r1 and side r2~~ R1 and side T2 of the top face P3 has a relatively large radius, such as, for example, but not limited to, 0.10 inch. Most preferably, the rear face P6 is angled Θ_1 relative to the plane formed by the lower face P5 at about 131 degrees.--